

IN THE CLAIMS:

The following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-2 (Canceled)

3. (Currently Amended) ~~The A system of claim 1, wherein the target sensor unit further for electronically actuating a firearm, comprising comprises:~~

a target sensor unit configured to determine a target offset angle, compute a point-of-aim offset angle, and generate a target sensor signal when the target offset angle and the point-of-aim offset angle are substantially coterminous, having the same end point, wherein the target sensor unit further comprises

a target sensor configured with a first detector to detect electromagnetic radiation having wavelengths within 8 to 14 microns and to generate detector signals[[:]], and

a target sensor processor coupled to the target sensor for analyzing the detector signals to generate the target sensor signal; and

a firing unit electrically coupled to the target sensor unit, the firing unit configured to electronically ignite one or more axially loaded ammunition loads upon receiving the target sensor signal and a trigger signal.

4. (Original) The system of claim 3, wherein the target sensor unit further comprises: a second detector configured to detect electromagnetic radiation having wavelengths within 3 to 5 microns and having signals which are spatially correlated with the signals of the first detector having wavelengths within 8 to 14 microns, and the target sensor processor analyzes signals from the first and second detectors, which first and second detector signals in ratio are indicative of target temperature.

5. (Currently Amended) ~~The A system of claim 1, wherein the firing unit further~~
for electronically actuating a firearm, comprising comprises:

a target sensor unit configured to determine a target offset angle, compute a point-of-aim offset angle, and generate a target sensor signal when the target offset angle and the point-of-aim offset angle are substantially coterminous, having the same end point; and

a firing unit electrically coupled to the target sensor unit, the firing unit configured to electronically ignite one or more axially loaded ammunition loads upon receiving the target sensor signal and a trigger signal, the firing unit further comprising

an ammunition tube configured to store the one or more axially loaded ammunition loads;

an ammunition tube receiver configured to insertably accept the ammunition tube;

a fire controller for generating a firing signal upon processing the target sensor signal and the trigger signal; and

a sequence controller for sequentially discharging the one or more axially loaded ammunition loads upon receiving the firing signal.

6. (Original) The system of claim 5, wherein the ammunition tube has a conically shaped receiver end electrically coupled to the ammunition tube receiver, and a distal muzzle end for guiding the discharged one or more axially loaded ammunition loads.

7. (Original) The system of claim 5, wherein an outer wall thickness of the ammunition tube is 0.03 to 0.25 inches.

8. (Original) The system of claim 5, further comprising:

a plurality of receiver tube electrical contacts;

a receiver firing circuit configured to electrically couple the sequence controller and the plurality of receiver tube contacts;

a plurality of ammunition tube contacts electrically coupled to the plurality of receiver tube contacts; and

an ammunition tube internal firing circuit for electrically coupling each of the plurality of ammunition tube contacts with a corresponding ammunition load of the one or more axially loaded ammunition loads.

9. (Currently Amended) The system of claim 5, further comprising:

a plurality of ammunition tubes;

an the ammunition tube receiver configured to insertably accept the plurality of ammunition tubes; and

a the sequence controller for sequentially discharging the one or more axially loaded ammunition loads in the plurality of ammunition tubes upon receiving the firing signal.

Claims 10-11 (Canceled)

12. (Original) The system of claim 3, wherein the target sensor is an array of microbolometer detector elements.

13. (Original) The system of claim 12, wherein the target sensor array is a quad cell detector array.

14. (Original) The system of claim 3, wherein the target sensor is an array of detector elements from among the class of barium strontium titanate, vanadium oxide, amorphous silicon or bimetal compositions.

15. (Currently Amended) The system of claim 14, wherein ~~the~~ a position of ~~the~~ a target is determined by ~~the~~ a sum of ~~the~~ moments of the signals from contiguous detector elements illuminated by a target image.

Claim 16 (Canceled)

17. (Currently Amended) ~~A The method for actuating a firearm having axially loaded ammunition loads, comprising of claim 16, wherein the determining further comprises the steps of:~~

identifying a target based upon target radiation patterns having wavelengths within 8 to 20 microns;

determining ~~the~~ a point-of-aim offset angle based upon a bullet drop, a firearm delay time and ~~the~~ motion of the firearm; and

determining ~~the~~ a target offset angle based on motion of the target, a flight velocity of the ~~one or more~~ axially loaded ammunition loads, and a target range~~[[,]]; and[[:]]~~

electronically igniting the axially loaded ammunition loads when end points of the point-of-aim offset angle and the target offset angle are substantially coincident ~~wherein the identifying further comprises the step of identifying a target based upon target radiation patterns having wavelengths within 8 to 20 microns.~~

18. (Currently Amended) The method of claim 16~~7~~, further comprising the step of computing a centroid of the target radiation patterns, the centroid corresponding to ~~the~~ a target position.

19. (Currently Amended) The method of claim 16~~7~~, further comprising the step of defining a central zone of the target radiation patterns, the central zone corresponding to ~~the~~ a target position.

20. (Currently Amended) The method of claim 19, wherein the central zone is bordered by a radiance contour, the radiance contour defined at points within the target radiation patterns where a second derivative of radiance of the target radiation patterns is zero along a chord of the target radiation patterns.

Claims 21-22 (Canceled)